

PIN entered by the conferee. The sequence of instructions also includes deriving, from the PIN and a portion of the information derived from the first string of digits, a conference I.D. number, and validating the conference I.D. number.

Yet another embodiment is directed toward a teleconferencing bridge including at least one programmable device that effects a sequence of instructions comprising receiving information derived from an input sequence entered by a conferee,

receiving a PIN from the conferee, and generating a conference I.D. number based on at least a portion of information received and the PIN.

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Brief Description of the Drawings

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The foregoing and other objects and advantages will be more fully appreciated from the following detailed description when taken in connection with the following drawings. It is to be understood that the drawings are for the purpose of illustration only and are not intended as a definition of the limits of the invention. In the drawings, in which like elements are represented by like numerals,

Fig. 1 is a block diagram illustrating one example of a teleconferencing system;

Fig. 2 is a flow diagram illustrating an exemplary method for assigning access information to a conference to a group of conferees; and

Fig. 3 is a flow diagram illustrating an exemplary method for connecting a

20 conferee to a conference.

Detailed Description

In view of the problems discussed in reference to the prior art teleconferencing

systems, it may be desirable to provide a method of teleconferencing which allows the use of a short personal identification number (PIN) over a large subscriber base, without sacrificing security or availability of PIN's.

Referring to Fig. 1, a teleconferencing bridge 10 may be connected to a public

switched telephone network (PSTN) 16 via, for example, a T1 or ISDN line 18. A plurality of subscriber units, which may be, for example, telephone handsets 12 or computer terminals 14, may be connected to the bridge 10 via the PSTN 16. A private branch exchange (PBX) 11 may be provided between a subscriber unit and the PSTN. Alternatively, the subscriber units may be connected to the teleconferencing bridge 10 via a local or wide area network (LAN/WAN) 20, for example, the Internet. Again, a

PBX 11 may exist between the subscriber unit and the LAN/WAN. The teleconferencing bridge 10 may also include, or be connected to, an operator console 24, as will be discussed in more detail *infra*.

The teleconferencing bridge may identify individual conferences by means of a unique conference identification (I.D.) number. The teleconferencing bridge may include a storage element 22 where it may maintain a database of conference I.D. numbers and information regarding the associated conferences, and subscribers. The conference I.D. number may also be used by the bridge to distinguish between a host and guests of a particular conference, as will be discussed in more detail *infra*. The conference I.D. number may be used to derive an input sequence, such as a string of digits, for example, a telephone number, that may be assigned to a subscriber to allow the subscriber to access the teleconferencing bridge. Direct inward dial (DID) capability is a service provided by many telephone service companies that provides a block of pre-assigned numbers for calling into a private branch exchange. Using DID, a teleconferencing bridge may be accessible through many individual telephone numbers without requiring a physical line into the private branch exchange for each possible telephone number. The teleconferencing bridge may thus be accessible through many pre-assigned telephone numbers which have been allocated to the bridge by a telephone service provider and are available for use by subscribers to hold conferences.

Referring to Fig. 2, a particular conference I.D. number may be assigned to a group of conferees, step 21, to identify a predetermined conference to which the conferees may ultimately be connected. The conference I.D. number may be divided into a first portion, at least a part of which is used to derive an associated string of digits that may form part of a telephone number (one of the pre-assigned numbers) entered by a subscriber to join a conference, and a second portion, at least a part of which is used to derive a PIN to be entered by the subscriber, as illustrated in steps 23, 25 and 27. It is to be appreciated that while the following methods will be described in terms of the conference I.D. number consisting of two portions, this is by way of example only and not intended to be limiting. The conference I.D. number may be divided into any number of portions which may be used to generate various strings of digits, so as to allow the use of a short PIN over a large subscriber base. Access information to the predetermined conference may then be assigned to the conferees based on a combination of the input sequence and the PIN, step 29, as will be discussed in more detail *infra*.

Another service provided by many telephone service is a dialed number identification service (DNIS). DNIS is a service that identifies for a receiver of a call the number that the caller entered. In the United States, telephone numbers typically include seven digits that identify an exchange and individual line, and additional digits for an area, toll-free, or country code. DNIS may provide the receiver of the call, i.e., the teleconferencing bridge, with all or some of the digits making up the number entered by the caller.

Referring again to Fig. 1, the teleconferencing bridge 10 may include an operator console 24, which may have a graphical user interface, to allow an operator to control the conferences running through the teleconferencing bridge. The operator console may typically be a personal computer, although it is not limited to such and may be another type of computer or a custom piece of equipment. Through the operator console, an operator may create and update subscriber records, conference I.D. numbers, and billing information. The operator may also generate billing reports and usage reports. The operator may program the teleconferencing bridge to utilize a particular function or set of functions to generate conference I.D. numbers from pre-assigned DID numbers, and to generate PINs having a certain number of digits.

According to one embodiment of a method of teleconferencing, a conference I.D. number, associated with a unique, predetermined conference, is divided into two portions. A first portion includes a string of digits derived from the dialed number identification service (DNIS) information of a pre-assigned telephone number. A second portion is derived from a personal identification number (PIN) assigned to, and ultimately entered by, a conferee. Fig. 3 is a flow diagram illustrating an example method that may be implemented by the teleconferencing bridge to connect a conferee to a conference. First, the bridge may receive an input sequence from a potential conferee (step 30). For example, when a conferee uses the pre-assigned DID telephone number to call into the teleconferencing bridge, the bridge may extract the DNIS information (i.e. the entered number) that arrives with the call. The bridge may perform a predetermined function to obtain the first portion of the conference I.D. number (step 32), for example, from the DNIS information. The bridge may receive a PIN from the conferee (step 34), and perform another predetermined function to obtain the second portion of the conference I.D. number from the PIN (step 36). A conference I.D. number that uniquely identifies a particular conference, may be derived from a combination of the first portion,